



Significant Changes In 2013 California Codes For Energy Standards

PLANNING & BUILDING DEPARTMENT • COUNTY OF SAN LUIS OBISPO
976 OSOS STREET • ROOM 200 • SAN LUIS OBISPO • CALIFORNIA 93408 • (805) 781-5600

The 2013 California Energy Code goes into effect on **July 1, 2014**.

2013 Building Energy Efficiency Standards

California's Building Energy Efficiency Standards are updated on an approximately three-year cycle. The 2013 Standards will continue to improve upon the current 2008 Standards for new construction of, and additions and alterations to, residential and nonresidential buildings. The 2013 Standards will go into effect on January 1, 2014, following approval of the California Building Standards Commission.

2013 Residential Building Energy Efficiency Standards **Measure Summary**

Prescriptive Measures:

1. High Performance Windows – Reducing the U-Factor down to 0.32 and SHGC down to 0.25. **(Section 150.1(c)3A)**
2. Duct Insulation – Raise minimum from R-4.2 to R-6.0 in climate zones 6, 7, and 8. **(Section 150.1(c)9)**
3. Night Ventilation – Whole house fan as a minimum; allows Smart Vents and Night Breeze as alternatives in CZs 8-14. **(Section 150.1(c)12)**
4. Adding the Radiant Barrier requirements in CZs 3, and 5-7. **(Section 150.1(c)2)**
5. Increase wall insulation to R15/4 in all CZs **(Section 150.1(c)1B)**

Mandatory Requirements:

1. Duct sealing in all CZs. **(Section 150.0(m)11)**
2. Return duct design or fan power and airflow testing (Residential HVAC Quality Installation Improvements). **(Section 150.0(m)13)**
3. Lighting – Improving and clarifying the mandatory lighting requirements for all residential buildings including kitchens, bathrooms, dining rooms, utility rooms, garages, hall ways, bedrooms, and outdoor lighting. Require at least one high efficacy luminaire in each bathroom. **(Section 150.0(k))** Updated requirements for LED luminaires for manufacturers to certify to qualify as high efficacy. **(JA-8)**
4. Hot water pipe insulation -Requires insulation on pipes $\frac{3}{4}$ inch and larger. **(Section 150.0(j)2Aii and Section 150.0(j)4)**
5. Solar Ready Measure – 250 square feet of solar ready zone on single family roofs. **(Section 150.0(r))**

Compliance Options

1. Solar Photovoltaic can be used as a compliance option to comply under the performance path.

2. Occupant Controlled Smart Thermostat as a tradeoff against the solar ready zone. **(Section)110.10(b)1A EXCEPTION 6)**

Additions and Alteration

1. Simplified Compliance documentation requirements for small additions and alteration projects that do not involve a HERS measure. **(Section 150.2(a) and (b))**
2. Simplified rules for both the prescriptive and performance paths for additions, alterations, and existing plus additions plus alterations. **(Section 150.2(a) and (b))**

2013 Nonresidential Building Energy Efficiency Standards Measures Summary

Envelope

1. Increased low-slope cool roof requirements (increase reflectance from 0.55 to 0.63 for new construction and alterations). **(Section 140.3(a)1Aia1)**
2. Established a maximum air leakage rate (0.04 cfm/sf) except in mild climate zones. Consistent with air leakage requirements in IECC. **(Section 140.3(a)9B)**
3. Increased fenestration requirements to reduce solar gains and increase visual light transmittance for day-lighting; 0.36 U-factor, 0.25 SHGC, VT 0.42 for fixed windows; the numbers are different for operable windows and skylights. **(Section 140.3(a)5B,C & D)**
4. Added mandatory minimum wall and roof insulation requirements. **(Section 110.8(e)(f))**

Lighting

1. Clarification and simplification of existing language; removing exceptions no longer relevant. **(Section 130.0-130.5, 140.6-140.8)**
2. Lighting control devices moving from Title 24 to Title 20; Lighting control systems shall now be acceptance tested for Title 24. **(Section 110.9(b) & Section 130.4(a))**
3. Nonresidential indoor lighting, advanced multi-level lighting controls (controllable ballasts) increased in granularity (in addition to ON/OFF, increasing from one intermediate level to three intermediate levels for or continuous dimming), favoring dimmable ballasts for linear fluorescent lighting systems. These controls will allow precise and non-interruptive adjustment of lighting to match the available daylighting, and provide dimming and demand response function throughout the building. **(Section 130.1(b) & Section 130.1(a) 2C)**
4. Enhancing, modifying, and day-lighting controls mandatory requirements (removed off ramps); day-lighting language significantly simplified. **(Section 130.1(d)** Inserted prescriptive day-lighting control requirements for secondary day-lit zones **(Section 140.6(d))**
5. Requirements for demand responsive reduction of lighting power being applied to smaller spaces. **(Section 130.1(e))**
6. Mandatory Automated Lighting Controls and Switching Requirements in Warehouses and Libraries -Require the installation of occupancy sensors in warehouse aisle ways and open spaces, and library stack aisles. **(Section 130.1(c)6A & B)**
7. Mandatory automated multi-level lighting shut-off controls and switching requirements for hotels and multifamily building corridors - Require the installation of occupancy sensors in corridors and stairwells in lodging and multifamily buildings. **(Section 130.1(c)6C)**

8. New mandatory occupancy sensor and daylighting controls in parking garage spaces. **(Section 130.1(d)3)**
9. Increased requirements for multi-level lighting controls for nonresidential outdoor lighting. **(Section 130.2(c)3B)**
10. Existing outdoor lighting cutoff (shielding) requirements, changed to the new IES standard: Backlight, Uplight, Glare (BUG) requirements. **(Section 130.2(b))**
11. Reduction of allowed lighting power density for some nonresidential indoor and outdoor lighting applications. **(Section 140.6(c) and Section 140.7(d))**
12. Tailored lighting revisions - Reduce the allowed LPD for Floor Display, Wall Display, and Ornamental Lighting under the Tailored Compliance. Significant editing of Tailored Method language for clarification. **Section 140.6(c)3I, J & K)**
13. Plug Load Circuit Controls - requiring automatic shut-off controls of electric circuits that serve plug loads, including task lightings, in office buildings. **(Section 130.5(d)1)**
14. Hotel/Motel Guest Room Occupancy Controls for HVAC and lighting systems - would require installation of occupancy controls for HVAC equipment, and all lighting fixtures in hotel/motel guest rooms, including plug-in lighting. **(Section 120.2(e)4 & Section 130.1(c)8)**
15. Reduction of threshold when lighting alterations must comply with the Standards, (from when 50% of the luminaires are replaced), to when only 10% of the luminaires are replaced. Consistent with proposed changes to ASHRAE 90.1-2010. **(Section 141.0(b)I & J)**
16. Added threshold requirements for when luminaire-modifications-in-place (sometimes referred to as lighting retrofits – i.e.: lamp/ballast change-outs) must comply with the Standards. **(Section 141.0(b)I)**

Mechanical

1. Added requirements for Fan Control and Integrated Economizers. Packaged units down to 6 tons must be VAV with the ability to modulate cooling capacity to 20% of maximum. Economizers must also be able to modulate cooling capacity to match VAV units. **(Section 140.4(c) & (e))**
2. Reduced ability for HVAC systems to reheat conditioned air. **(Section 140.4(d))**